DOCUMENT RESUME

ED 428 487 EC 307 090

AUTHOR Keller, Richard M.
TITLE Adaptation of Psychological Assessment Tools for Administration by Blind and Visually Impaired Psychologists and Trainees.
PUB DATE 1997-00-00
NOTE 14p.
PUB TYPE Guides - Non-Classroom (055)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adults; *Graduate Students; Higher Education; Intelligence Tests; *Psychological Testing; *Psychologists; *Test Interpretation; Testing; *Testing Problems; *Visual Impairments
IDENTIFIERS Bender Visual Motor Gestalt Test; Rorschach Test; Thematic Apperception Test; *Wechsler Adult Intelligence Scale (Revised)

ABSTRACT

This paper focuses on challenges to psychologists and psychology graduate students who are blind or visually impaired in the administration and scoring of various psychological tests. Organized by specific tests, the paper highlights those aspects of testing which pose particular difficulty to testers with visual impairments and also describes methods by which some tests can be adapted to mediate these challenges. Specific tests include: (1) the Wechsler Adult Intelligence Scale-Revised verbal subtests and performance subtests; (2) the Visual Motor Gestalt Test; (3) the Rorschach Test; (4) the Thematic Apperception Test; and (5) projective drawing tests. (CR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 428 487

ADAPTATION OF PSYCHOLOGICAL ASSESSMENT TOOLS FOR ADMINISTRATION BY BLIND AND VISUALLY IMPAIRED PSYCHOLOGISTS AND TRAINEES

Richard M. Keller

BEST COPY AVAILABLE

Teachers College, Columbia University

EC 307 090

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Fall 1997

Keller

In 1973 Section 504 of the Rehabilitation Act was passed. This law was the first step in guaranteeing persons with disabilities equal opportunities in educational arenas. In 1979 the American Psychological Association established the Task Force on Psychology and the Handicapped which included into its objectives the investigation of educational and career opportunities in the field of psychology for individuals with disabilities (Final Report, 1984). The Americans with Disabilities Act now stands as the piece of legislation which guarantees a level playing field for persons with disabilities with respect to full and independent participation in all aspects of life in America. The mechanisms by which full participation can be accomplished are still undergoing development. The major shift is that now it is the responsibility of employers, educational institutions, and the greater American society to develop and implement such mechanisms as opposed to locating the responsibility within disabled individuals and the disabled population.

There are many challenges in training for and working at careers in psychology. It is likely that persons with disabilities may face additional or unexpected challenges, including negative attitudes by colleagues and clients and difficulties in performing various tasks of professional psychology. This paper focuses on challenges to psychologists and psychology graduate students who are blind or visually impaired in the administration and scoring of various psychological tests. Organized by specific tests, this paper will highlight those aspects of testing which pose particular difficulty to visually impaired testers and also will describe methods by which some tests can be adapted to mediate these challenges.

Wechsler Adult Intelligence Scale-Revised (WAIS-R)

The verbal subtests. In this author's informal task analysis, the primary functions of a test administrator on this set of subtests are to convey instructions to the subject, present each item, record the subject's responses, time those responses, and track sequentially erroneous responses. The difficulties imposed by this set of functions on visually impaired or blind test administrators (VITA), stem from the fact that one of the primary modalities relied on to accomplish these tasks (Wechsler, 1981) is visual. At least two alternate

options, both of which are vision-free, may be substituted for the standard form of administration for both reading and writing tasks.

The first option is to read and write in Braille. An advantage of Braille is that for the reading function, it is silent and unobtrusive thereby rendering the experience of the subject almost identical to being tested using standard methods of administration. While Braille holds this advantage as an alternative format, one should keep in mind the issue of bulk. For example, the King James Bible while admittedly a large book in print format can be comfortably carried by most individuals. The same book in its Braille translation would require six large boxes of Brailled paper. On the other hand, manual recording of subject's verbal answers in Braille is hardly unobtrusive, given the sound of a Braille typewriter or stylus. Without research to examine this question, it is unclear what impact this intrusion would have on the testee's performance.

It is possible that the alternatives suggested here may be useful for test administrators with print disabilities other than those resulted from vision system deficiencies. The term "print disability" has been used to describe individuals for whom standard print is inaccessible. This group includes persons who are blind and visually impaired or have some forms of learning disabilities. Historically, individuals with print disabilities have incorporated audio cassettes as an alternative format for printed material to maximize portability. The same King James Bible can be recorded on ten to twelve audio cassettes and easily transported in a small box or a cassette album. This solution might prove to be unwieldy for interactive events as it would require the manipulation of two recorders: one for playback and one for recording.

The filed of assistive technology has developed a number of alternatives for individuals with disabilities with respect to computer usage. These include the use of speech synthesis as a substitute for reading the computer screen. A computer adapted with speech synthesizer translates the visual output into auditory output. Similar technology exists that translates visual output into Braille output. Computers adapted for Braille output utilize refreshable Braille displays which are mechanical devices that render simultaneous Braille translation of computer generated information. Such devices allow an individual to access the tactile equivalent of the visual material. The availability of these technologies in

conjunction with laptop computers may represent an elegant solution with respect to reading and writing tasks for print disabled individuals. This author has used an adaptive computer with speech synthesizer, screen reading software, and earphones to read and write in virtual silence. This minimizes the effect of the alternative format on the subject while permitting the administrator parallel and serial access to test materials in an extremely portable vehicle. With a little practice test instructions and items can be delivered verbatim by repeating with a slight delay the text listened to through the headphone, much in the way most news broadcasters work. Identical advantages can be realized by substituting a refreshable Braille display along with Braille translation software. Unfortunately, at the time of this writing Braille computer technology is at least ten times as costly as speech computer technology.

Using the adaptive laptop described above along with any simple word-processing package two files can be constructed for each of the verbal subtests. The first file contains the text of the Directions section for each subtest, while the second file contains the items themselves along with a space for the subject's response. The utility of dividing a single file for each subtest into two is that it will facilitate administration of test items speedily. The VITA does not need to move through the direction section to locate test items while having this material available for review at a moment's notice. The integration of the sample responses and their scoring with the test items and subject's responses will facilitate the tracking of incorrect responses for purposes of discontinuation. Below is a sample of this second file from the Vocabulary subtest:

4. Winter

4A)

2 Points - Cold and season, understanding of when i.e. after Fall

1 Point - Season or Cold alone.

0 Points - Climate or change in the weather.

When the VITA has become more familiar with each subtest and respective Directions sections it may be useful to abstract the key elements of the directions and insert them at the beginning of the file containing test items, such as:

SUMMARY: Word list is presented to subject. Items 21 through 35 are on the second side. Start with item # 4 unless subject seems to have poor verbal ability, then start with Item #1. Credit for 1 -3 ONLY if subject gets # 4 - 8 all correct. Stop after 5 consecutive missed words. Tester says: " I want you to tell me the meanings of some words," "What does X mean?" Tester can say: "Tell me more about it" or "Explain what you mean."

This adaptation provides the VITA with access to test directions, items, correct responses, and subject responses in a portable user-friendly environment. It also permits the administrator access to all materials during the administration and subsequently for scoring and interpretation while potentially not significantly impacting on results reliability.

Observing and recording the various time components for each subtest is a task not to be minimized with respect to alternative format test administration. This author having decided upon the laptop computer as administration tool had hoped to locate a simple software program that could be integrated into the word processor and effortlessly perform these functions. At this writing, no such program has been located. However, the search may have been abandoned too soon or it may be possible to develop such a program with relative ease.

For the purposes of this paper let us consider separate time keeping devices. Individuals with print disabilities who are able to utilize large print seem to have an advantage here. Numerous varieties of large print watches and clocks exist. Using residual vision the VITA can perform this function identically to normally sighted administrators. For individuals who cannot utilize residual vision this task is considerably more daunting. One must consider the availability of precision time pieces which display through either Braille or speech. Unfortunately, appropriate options are limited. Watches and clocks that "speak" usually do so at a high volume. This may negatively impact on the testing

situation. Braille watches most often do not have second hands and in the event that such a devise is located it may be quite difficult to use this instrument with a reasonable degree of fluidity while managing simultaneous additional tasks. The apparent discontinuation of the manufacturing of Braille stop watches further adds to the dilemma faced by the VITAs. One devise was located which seems to balance the concerns between accuracy, facility, and subtlety. A talking watch manufactured by Vox announces time at a very low volume and contains an elapse time feature. This watch has been used in conjunction with the adaptive laptop solution and seems to provide accurate timing of subject's responses to the second while remaining relatively unobserved by the test subject.

Performance subtests. For most of the tasks needed to administer the performance subtests similar adaptations to those used for the verbal subtets may be employed - the laptop computer for reading and writing functions and the talking watch for timing. However, due to the nature of the performance subtests additional functions must be considered and will be discussed here individually.

With respect to picture completion two concerns have been identified. First, the VITA must evaluate responses generated by a visual stimulus. This concern can be addressed by including information in the file that contains the test items in the similar fashion to correct answer information included in the corresponding file for each verbal subtest, as follows:

1. Door

A1)

C1) Doorknob, Knob.

The other concern is that of evaluating nonverbal and vague responses given by the subject. For example, on item 4 the subject may respond: "The diamond over here," while pointing to the appropriate location on the stimulus. The VITA can simply obtain the necessary additional information by asking a question such as: "Tell me where?" In this author's experience, many subjects begin to automatically provide verbal correlates on nonverbal responses after a few such queries are posed. This process is a departure from

standardized administration. This alteration of the task for the testee necessitates some degree of verbal processing. Without research to explore the potential effect of this procedure it is unclear what, if any, impact it produces on the reliability of the test results.

The concern with respect to picture arrangement stems from the fact that the codes for stimulus presentation and evaluation are contained on the back of the stimuli themselves in print. This problem can be addressed by replacing the standard code with either large print or Braille. The VITA can utilize a file similar to the ones already discussed to ensure appropriate stimulus presentation and record the subject's response and time, as follows:

1P) 60 sec ACP
1A) ???, ?? sec
1C) CAP

The Block Design subtest can be administered with three modifications. First, the blocks themselves must be slightly altered so that the color information (red, white, mixed) can be perceived both through visual and tactile observations. This can be accomplished by affixing thin textured adhesive tape to the corresponding locations on each block. Attention to the hue is addressed by altering the white and not the red sides. The other two modifications relate to the spiral-bound Picture Completion/Block Design elements contained in the WAIS-R kit and actually facilitate both Picture Completion and Block Design subtets. A duplicate booklet must be obtained for these modifications. In order to ensure proper orientation of stimulus presentation a single Braille dot can be affixed to the front cover of each of the two booklets. This will orient the VITA with respect to landscape and convey appropriate information as to which of the two tests are being manipulated. Correspondingly, two Braille dots can be affixed to the page that indicates the beginning of the Block Design section of the booklet. This section must be further modified in the book for use by the VITA. To enable the VITA to evaluate the subject's response the visual information must be translated into tactile information similarly to the adaptations on the blocks themselves. Specifically, the same white textured adhesive can be affixed to the

corresponding locations on each card. This creates the tactile connection between the blocks, the model, and the subject's response. It may be useful to facilitate tactile decoding with respect to the number of blocks (i.e., designs 6-9), and orientation (i.e., design 9) by affixing a tactile border around the perimeter of each of the nine designs. The computer file for use with this subtest conveys relevant information as follows:

6P) 9 Blocks, 120 seconds
Bonus: 4 points 36-120 sec, 5 points 26-35 sec, 6 points 21-25 sec, 7 points 1-20 seconds.
6A) (correct or incorrect, ??? sec).

The Object Assembly subtest at first glance seems to be the most difficult one to adapt. However, the actual administration can be accomplished with relative ease provided that stimulus presentation and familiarity with correctly assembled objects along with their respective parts are attended to. In order to reliably present the stimulus the overall orientation as well as the relationship between parts must be maintained. This can be accomplished by constructing a form utilizing a full-scale negative image from the graphic representation of object assembly presentation contained in the test manual. The negative image is then used to produce a durable frame into which the object parts can be inserted. A tactile cue such as a single Braille dot for object 1 (Manikin), two dots for object 2 (Profile), etc. can be affixed to the frame to ensure presentation orientation and to distinguish between the four objects. To present the stimulus to the subject the VITA properly orients the frame and then lifts it to reveal only the object parts properly aligned as depicted in the test manual.

The other concern related to this subtest is that of scoring. Scoring of completely and correctly assembled objects can be easily accomplished via tactile observation. Similarly, the number of cuts that have been correctly adjoined can be verified through tactile means. It should be noted that a considerable investment of time must be made to prepare for scoring. While the time investment in scoring preparation may vary from individual to individual, approximately twenty hours were spent on this task by the author.

The computer file associated with subtest enables the VITA to record the number of cuts along with the elapsed time for each subject. This record will provide enough information so that the actual score can be computed without the presence of the subject. To simplify this procedure the time bonuses are included within the file as follows:

Scores for perfect performance on the Manikin with time bonuses included: 21-120 sec -5, 16-20 sec - 6, 11-15 sec -7, 1-10 sec - 8
Manikin) 120 Seconds
Cuts) 5: ? (correct cuts)
Time) ??? sec

The Digit Symbol subtest is relatively simple to administer. The main concern for VITAs is that of accurately scoring responses generated by the subject in hand-written symbols. One might simply employ a sighted assistant or contract with a colleague to perform this function. However, this will not accomplish independence on the task. Independence can be achieved by having the answer sheet reproduced in the tactile format. As of this writing, there is at least one device that can perform this translation. A company named Reprotronics manufactures a device which scans graphic images, translates them into tactile representations, and produces these representations in hard copy format. The tactile hard copy can be independently scored by the VITA. This method may be utilized with other instruments that pose similar concerns for VITAs, including The Visual Motor Gestalt Test, Rorschach-Test, and Projective Drawing Tests, such as The House-Tree-Person Test.

Other Assessment Tools

The Visual Motor Gestalt Test. This instrument can be administered by VITAs with virtually the same ease as normally sighted testers using the instructions provided by Bender (1938). The single modification of the test materials is the replacement of printed card identification marks (A, 1-9) with large print or Braille substitutes. If these substitute markings are consistently placed on the back of the card they will facilitate not only the

identification of each card but serve as a focal point for the initial card orientation as well. VITAs with no residual sight may potentially fail to observe the subject's reorientation of the stimuli. One strategy to maintain the associated clinical observation is to lightly touch one corner of the card with a finger. While this strategy may be interpreted as impacting on the test results, it seems to be in line with the original instructions that provide for gently discouraging subject from reorienting the stimuli (Bender, 1938). The recording of any clinical observations can be accomplished via the laptop computer described above. Interpretation of the responses can be accomplished in a similar fashion described in the section pertaining to the Digit Symbol subtest of the WAIS-R. Again, this author encourages the independent approach using the graphic-to-tactile translation device for both original test materials and subject's responses.

Rorschach-Test. The adaptive administration of this instrument poses numerous challenges especially when the scoring system developed by Exner (1969, 1986, 1991) will be utilized. Some of these challenges may be met using the methods detailed above, such as the strategic placement of Braille or large print indicators for stimulus identification and orientation purposes and the adaptive laptop computer to record verbatim responses and subsequent inquiry. These modifications alone will not serve to capture all of the data required for subsequent scoring and interpretation. The requirement of percept location must be addressed through an additional modification. A set of high quality color copies can be used for this purpose. Location information can be obtained by instructing the subject to circle and identify the portions of each stimulus on the copy, which correspond to percepts in each response. Having handled subject's response content and tended to stimulus presentation concerns, along with ensuring the collection of location data, test administration can be successfully conducted.

Many of the requirements of Exner's scoring system can be handled without modification, provided that the proper tools such as A Rorschach Workbook for the Comprehensive System (1995) have been made accessible. The location parameter again creates additional concerns. First, the information contained on the copy must be reproduced in tactile format in the fashion previously described. Secondly, the illustrations conveying location coding information must be likewise translated. These two translations

can then be integrated for accurate location score. Once equal access is obtained in administration and scoring phases, interpretation can be drawn with no additional modification. It may be prudent for the VITA to prepare to use this test by collecting descriptions of the cards themselves from colleagues, producing tactile versions of the cards, and integrating the two in the training process to develop an objective gestalt of the stimuli.

The Thematic Apperception Test. This instrument may be successfully administered through adaptive means using similar strategies to those discussed above. That is, by replacing the printed identifying marks on the back of each card with Braille or large print substitutes. This strategy affords the VITA stimulus identification and assures proper orientation for stimulus presentation. Likewise, recording of subject's responses can be accomplished using an adaptive laptop computer.

Two major concerns remain with respect to administration and interpretation of this test. The first is attaining an understanding of the objective graphic material contained on each card. Semantic descriptions can be found in Allison, Blatt, and Zimet (1988) and Groth-Marnat (1990) in addition to numerous thematic samples of responses. Diligent review of these materials along with various other sources should provide the VITAs with the equivalent and possibly even more objective understanding of the stimuli as their sighted counterparts. The second concern is related to the VITA's ability to adjust in real time in the testing situation. Since most administrations of the TAT call for selecting from among the twenty potential stimuli the testing situation may dictate that cards that have been selected in advance prove not to provide salient data. In these cases the tester must draw on overall understanding of the instrument and specific knowledge of each of the cards. Without the benefit of accurate vision it would be impossible to adjust in these situations without having a method of quickly providing the objective description in lieu of visually scanning the cards. The solution to this dilemma is again via the laptop computer. A short file can be constructed containing the card identification mark along with a brief synthesis of key objective description and frequently occurring themes, as follows:

Picture 9BM: Four men in a field are lying against one another.

Frequent Plots: Stories typically explain in some manner why the men are there and frequently describe them either as homeless wanderers or as working men who are taking a much needed rest.

Projective Drawing Tests. Instruments of this type can be administered and interpreted by VITAs. The adaptive laptop computer allows for the conveying of any instructions along with the ability to record any clinical observations. The responses to these tests can be translated from graphic to tactile formats to facilitate the interpretation. It should be noted that the VITA'S general level of familiarity with graphic representations may play a role in test interpretation. This familiarity may be increased by incorporating the tactile solution during training along with the aggregation of knowledge through experience.

Discussion. The adaptations and strategies described in this paper are intended to stimulate further investigation in this area. While specific solutions have been proposed numerous alternatives exist which may lead to different solutions on both the micro and macro levels. Notwithstanding specific choices pertaining to adaptations several general principles seem apparent.

1. The time and labor investment of the VITA with respect to these tasks may be considerable.

2. Reactions from subjects (particularly from clinical populations) may arise as the result of the adaptations or as a reaction to disability of the VITA.

3. The reliability of test administration through adaptive methodology must be investigated.

4. The complex set of tasks which must be carried out to accomplish a professional psychological assessment can be successfully completed regardless of functional limitations that the test administrator may have as a result of a disabling condition.

In line with the American Psychological Association Policy on inclusion and the extraordinary improvements in the adaptive technology methodology such as described in this paper may prove to be fertile ground for further consideration and research.

REFERENCES

Allison, J., Blatt, S. J., & Zimet, C. N. (1988). The Interpretation of Psychological Tests. New York: Taylor & Francis.

Bender, L. (1938). For the Use of Visual Motor Gestalt Test. The American Orthopsychiatric Association.

Exner, J. E., Jr. (1969). The Rorschach Systems. New York: Grune & Stratton.

Exner, J. E., Jr. (1991). The Rorschach: A Comprehensive System. Volume 1: Basic Foundations. (2nd ed.). New York: John Wiley & Sons.

Exner, J. E., Jr. (1991). The Rorschach: A Comprehensive System. Volume 2: Interpretation.(2nd ed.). New York: John Wiley & Sons.

Exner, J. E., Jr. (1995). A Rorschach Workbook for the Comprehensive System. Asheville, NC: Rorschach Workshops.

Final Report of the Task Force on Psychology and the Handicapped. (1984). American Psychologist, 39 (5), 545-550.

Groth-Marnat, G. (1990). Handbook of Psychological Assessment. (2nd ed.). New York: John Wiley & Sons.

Wechsler, D. (1981). WAIS-R Manual. San Antonio, TX: The Psychological Corporation.